Clinical pathologic characteristics of mucinous breast cancer: a retrospective analysis of 10-year study

Lei Lei(Zhejiang cancer hospital, P.R. China), Bo Chen(Zhejiang cancer hospital,P.R. China) , Zhan-Hong Chen(Zhejiang cancer hospital, P.R. China) , Xiao-Jia Wang(Zhejiang cancer hospital, P.R. China).

BACKGROUND: Mucinous breast carcinoma (MC) is a special type of breast cancer, presenting with a large amount of extracellular mucin, comprising approximately 4% of all invasive breast cancers. This type of tumor has favourable prognosis and higher incidence in peri- and post-menopausal breast cancer patientsPathologically, it is divided into two main subtypes, the pure type and the mixed type. In this study, we aimed to report the last 10-year experience of the Zhejiang Cancer Hospital in China regarding mucinous breast carcinoma with its clinical data, histological and immunohisto-chemical particularities.

METHODS: We identified patients who were diagnosed MC from January 2001 to January 2011. All patients were divided into three groups: patial mixed mucinous breast carcinoma (pMMC) was defined as less than 50% mucinous component; main mixed mucinous breast carcinoma (mMMC) was defined as mucinous component accounted from 50% to 90%; PMC was defined as mucinouscomponent accounted more than 90%.The clinical pathological characteristics included age at diagnosed, menopausal status, tumor size, TNM stage, lymph node (LN) metastasis, estrogen receptor (ER), prostrogen receptor (PR), human epidermal growth factor receptor-2 (HER2) and P53. If the tumor defined as MMC, IHC was tested in non-mucinous part such as invasive ductal and lobular cancer. We evaluated the clinical characteristics of breast cancer patients using t-tests and chi-square tests. We also studied the correlation between all the clinical parameters with LN metastasis with binary logistic regression. We used consecutive ten years of data that were collected at Zhejiang Cancer Hospital.

RESULTS: We identified 48 cases diagnosed PMC (Fig.1) and 77 cases diagnosed MMC(Fig.2, 58 cases with pMMC and 19 cases with mMMC). The tumor size was larger in mMMC than PMC (44.84mm vs 30.06mm, p=0.031, Table 1). The clinical stages were significant different among three groups, pMMC had more III-IV stages patients than the other groups (p = 0.005). The LN metastasis was more frequent in pMMC either than mMMC and PMC (50% vs 31.58% and 18.75%, p=0.003). PMC had much less P53 expression than other two groups (27.08%vs55.17% and 57.89%, p=0.007). All of the clinical parameters were included in binary logistic regression analysis. The result showed that tumor size, P53 and the proportion of mucinous component might impact LN metastasis(Table 2).

CONCLUSION: Based on this study, we can conclude that there are obvious differences between PMC and MMC in clinical characteristics. LN metastasis, higher clinical stages,P53 mutations were presented more often in MMC patients than in PMC patients. The amount of mucinous component in MMC patients should be considered in diagnosis.